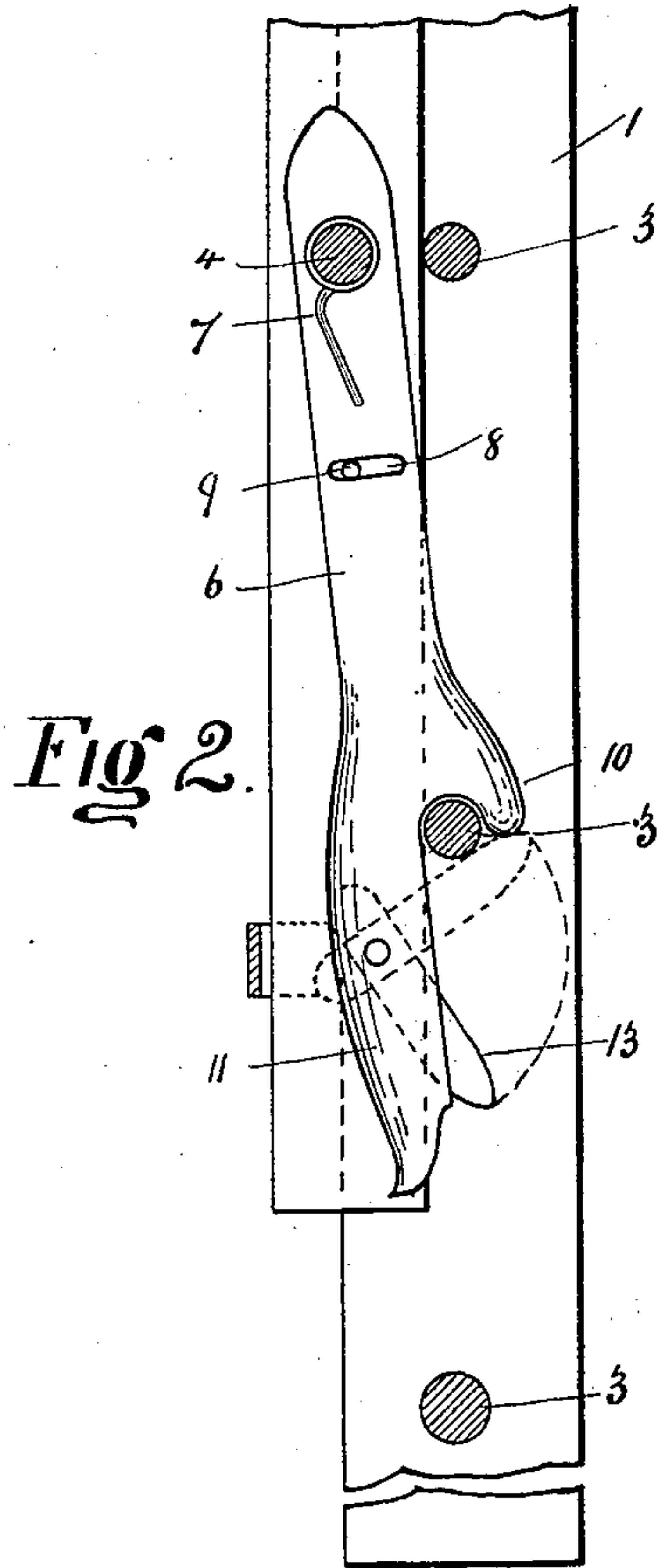
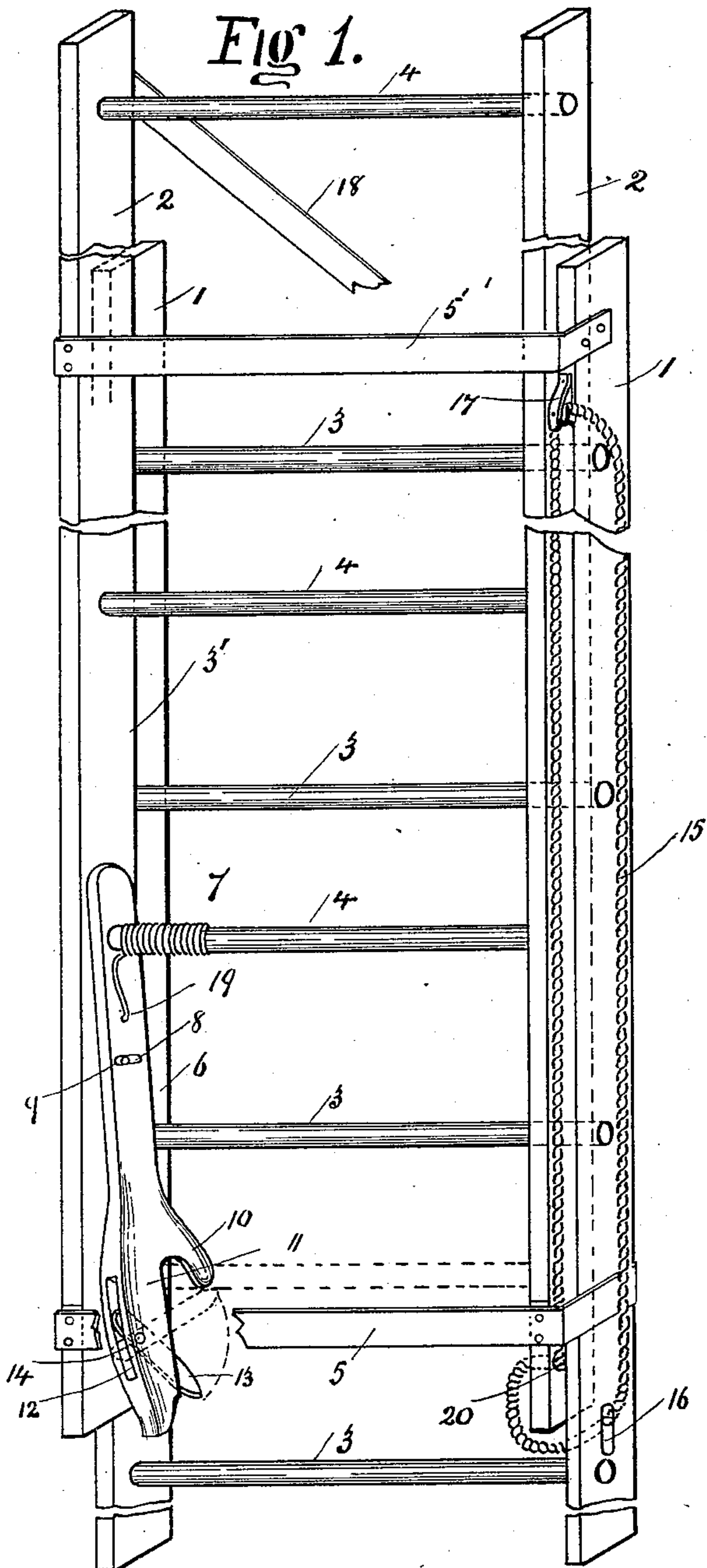


(No Model.)

J. A. FISK.  
EXTENSION LADDER.

No. 565,444.

Patented Aug. 11, 1896.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JAMES A. FISK, OF AVILLA, INDIANA.

## EXTENSION-LADDER.

SPECIFICATION forming part of Letters Patent No. 565,444, dated August 11, 1896.

Application filed November 18, 1895. Serial No. 569,273. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES A. FISK, a citizen of the United States, residing at Avilla, in the county of Noble, in the State of Indiana, have  
5 invented certain new and useful Improvements in Extension-Ladders; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it  
10 appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in extension-ladders, and the objects of my  
15 improvements are to provide a light portable ladder made in sections, so that its length can be increased or diminished at pleasure, and that can be cheaply made, and yet will be durable and safe. I attain these objects  
20 by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved extension-ladder broken in parts, and showing the relative arrangement of the  
25 ladder-sections, the operating-cord, and the automatic holding device. Fig. 2 is a fragmentary view of the said sections in a vertical section showing a detail of the spring-pressed holding-catch in its position for a  
30 holding engagement with the lower section.

Similar figures refer to similar parts throughout both views.

The ladder may have two or more sections. As shown in the drawings, it is in two sections, the extension or sliding part being  
35 mounted on the main or lower section. The lower section consists of the side rails 11, with rungs 3 3 3 secured to the side rails in any suitable manner substantially midway between the edges of the rails. Through the  
40 right-hand side rail 1, near the lower end, is a transverse slot 16 for the passage of the operating-cord 15, and near the upper end of the rail is a small pulley 17, adapted for receiving the cord 15. The upper or extension  
45 part of the ladder has also side rails 2 2 and rungs 4 4 4 secured at each end to the side rails midway between the edges in any suitable manner.

50 At the lower end of the extension section a transverse metallic stay bar 5 is secured to the front edges of the rails 2 and 2, and is

bent around the exterior sides of the rails 1 and 1 of the lower section, and also around the rear edges of these rails, thus forming a  
55 loosely-fitting clamp by which the lower end of extension-section is secured upon the lower section, while it admits of the sliding section being moved vertically upon the lower section. At the upper end of the lower section  
60 is another transverse stay-bar 5', which is bent at right angles at the ends and rigidly secured to the exterior sides of the rails 1 and 1. This stay-bar admits of the upper section sliding between it and the rungs of  
65 the lower section.

Upon one of the lower rungs of the extension-section is pivotally mounted against the inner side of the left-hand rail 2 a holding-catch 6 and a coiled spring 7, with the inner  
70 end of the spring secured to the rung and having at the other end an arm, secured at 19 to the catch-body.

8 is a transverse slot in the catch-body, and 9 a pin secured to the side rail working in the  
75 slot 8.

Near the lower end of the catch 6, on its rear edge, is a lug 10, so shaped as to form a recess 11 between the lug and the body of the catch, adapted to engage with the rungs of  
80 the lower section, as hereinafter described.

At the lower end of the catch 6, below the lug 10, is a slot 12, extending through from front to the rear and having loosely mounted within it, upon the pivot 14, the finger 13,  
85 having the lower end rounded or chamfered, as shown. The lower end of the finger 13 when in its normal position will project from the edge of the catch-body far enough to catch upon the rungs of the lower section when  
90 the upper section is being lowered, and the finger will be thrown against and rest upon the end of the lug 10 and permit the catch without obstruction to glide past the rungs, as shown by the dotted lines in the drawings.  
95 When past a rung, the finger is released and drops to its normal position, and then by slightly elevating the section the catch by the action of the spring 7 is forced against the rung, which will engage with it in the re-  
100 cess 11.

18 is a diagonal brace at the upper end of the sliding section of the ladder.

The mode of using my device is as follows:



The extension-section of the ladder is mounted upon the main or lower section and secured thereon by the stay-bars 5 and 5'. The operating-cord 15, preferably united at the ends, is passed through the slot 16 and over the pulley 17, and the ends secured to the lower end of the right-hand rail 2 at 20 in any suitable manner. The spring 7 by its arm 19 constantly presses the catch 6 against the immediate rung of the lower section, which by that means is engaged in the recess 11, and the extension is thus supported by the lug 10 resting upon the rung 3. The extension is elevated by means of the operating-cord 15, as will be readily understood, and as the lug 10 passes each rung the spring-pressed catch engages with the rung in the recess 11, when the cord is slackened. To lower the section, it is first elevated until the finger 13 passes above the rung upon which the catch was resting, and then lowering the section the finger 13 will engage with the lug 10, as already described, and permit the catch to pass without obstruction. As soon as the finger has passed below the rung it will drop to its normal position and the section may be suspended upon any rung of the lower section desired.

The slot 8 and guide-pin 9 are not essential, but preferably are convenient for retaining the catch from falling away from the rail when the ladder is held in different positions.

It is obvious that the catch and the cord may be placed on either side of the ladder without affecting the scope of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an extension-ladder having a lower main supporting-section and an upper slidable section mounted as shown, the operating-cord 15 passed through the slot 16 in the lower end of the side rail of the said lower section and over the pulley 17, attached to the upper end of said rail, and having its ends secured to the lower part of the slidable section, a spring-pressed holding-latch pivotally mounted upon the slidable section as shown, and adapted to support said section in its longitudinal extension, and having in the said latch a transverse slot 8 adapted to receive the pin 9, secured to the side rail, and having also at its lower extremity a lateral recess adapted to automatically engage the rungs of the sup-

porting ladder-section, and a gravity-finger 15 pivotally mounted in the slot 12 and adapted to permit a free passage of the slidable section in either direction, under the conditions described, by closing said recess to the engaging rung, substantially as shown and for the purpose stated.

2. In an extension-ladder comprising two sections, a spring-pressed holding-latch 6, pivotally mounted on the slidable section in approximately parallel relation therewith, and adapted to support said section in its longitudinal extension, as shown, and having a transverse slot 8 adapted to receive the pin 9 secured to the side rail, as shown, also having near its lower extremity a lateral recess 11 adapted to automatically engage the rungs of the supporting ladder-section, and a gravity-finger 13 pivotally mounted in the slot 12, and adapted to permit a free passage of the slidable section in either direction under the conditions described, by closing the said recess to the engaging rung, substantially as shown and for the purpose stated.

3. In an extension-ladder having a lower main supporting-section and an upper slidable section mounted as shown, an endless operating-cord 15 passed through the slot 16 in the lower end of the side rail of said lower section and over the pulley 17 attached to the upper end of said rail and secured at a suitable point to the lower part of the slidable section, a spring-pressed holding-latch pivotally mounted on the slidable section as shown and adapted to support said section in its longitudinal extension, and having in the said latch a transverse slot 8 to receive the pin 9 secured to the side rail and having as shown, also at its lower extremity, a lateral recess adapted to automatically engage the rungs of the supporting ladder-section, and a gravity-finger 13 pivotally mounted in the slot 12 and adapted to permit a free passage of the slidable section in either direction under the conditions described, by closing said recess to the engaging rung, substantially as shown and for the purpose stated.

Dated at Fort Wayne, Indiana, and signed this 15th day of November, 1895.

JAMES A. FISK.

Witnesses:

CHARLES B. FITCH,  
JOS. C. DWYER.